Math 120B   **Quiz #3**   **23 January 2003**

Name _____   Student Number _____

Show all work. Label your answers clearly.

1. (3 points) The following graph shows the monthly average temperature in degrees Fahrenheit. The variable x is in months with $x = 1$ corresponding to January.

a) Determine the month with the highest average temperature.

b) Estimate the lowest monthly average temperature.

c) Between which two months is the average temperature decreasing?

2. Audrey is standing at the edge of a small lake. Putting the origin at her feet, the bottom of the lake is given by the equation $y = .05x^2 - 2x$ for $0 \le x \le 40$, where distance is measured in feet. Audrey throws a piece of driftwood. Its path is given by the equation $y = -0.125x^2 + 2x + 4$ until it hits the surface of the lake. Then the driftwood floats to the opposite side of the lake.

a) (2 points) What is the maximum height of the piece of the driftwood over the surface of the lake?

b) (5 points) Give the multipart function $f(x)$ which gives the height of the driftwood over the **bottom** of the lake.